IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

JOSEF A. KOHEN, BREAKWATER TRADING LLC, and RICHARD HERSHEY, Plaintiffs, v. PACIFIC INVESTMENT MANAGEMENT COMPANY LLC, and PIMCO FUNDS, Defendants.	:	No. 05 C 4681 Honorable Ronald A. Guzman Magistrate Judge Arlander Keys

PIMCO'S AND PIMCO FUNDS' MOTION FOR LEAVE TO FILE
A RESPONSE TO PLAINTIFFS' "REPLY" MEMORANDUM

Defendants Pacific Investment Management Company LLC ("PIMCO") and PIMCO Funds (together "Defendants") respectfully request leave to file the proposed Sur-Reply, attached hereto as Exhibit A, in response to Plaintiffs' reply brief submitted on April 27, 2010.

Although styled as a "reply," Plaintiffs' brief sets forth extensive attacks on the Magistrate Judge's ruling, makes fundamentally misleading statements and omissions on key issues, and advances new, flawed arguments that Plaintiffs did not raise in their Objections and that in critically important instances contradict positions they have endorsed for several years. Indeed, this "reply" cites sixteen additional cases not cited in Plaintiffs' Objections, including eight new cases that were never even cited before the Magistrate Judge. The issues addressed therein go to the very heart of matters now before the Court, and their importance to a fully

informed review of the Magistrate Judge's Order weighs in favor of granting Defendants' request for leave to file a supplemental brief addressing such issues.

Defendants request permission to file the attached proposed response, which demonstrates that Plaintiffs' experts did not even purport to separate the impact of PIMCO's allegedly unlawful conduct from its admittedly lawful conduct and that Plaintiffs' new argument that it is "unnecessary, if not impossible" to disaggregate the effects of lawful conduct from unlawful conduct is contrary to law and contradicts their experts' own admissions. This flaw is by itself dispositive of Plaintiffs' Objections, and the Court need not even consider Plaintiffs' remaining arguments. (Proposed Response Part I.)

Nevertheless, Plaintiffs' other arguments rely on a number of misstatements and mischaracterizations, which Defendants feel compelled to correct. For example:

(1) Plaintiffs falsely attribute to Defendants' expert Hartzmark a statement that is in fact *not from Hartzmark at all*, but instead a quotation from the deposition of *Plaintiffs'* expert Professor Gilbert. (Proposed Response Part II.B.)

(2) Plaintiffs' assertion that PIMCO's position in the market was analogous to that of participants found to have manipulated the contract is misleading because PIMCO, unlike those market participants, made the underlying cash commodity available to the market through repurchase agreements. (Proposed Response Part II.A.)

(3) Plaintiffs' new argument that taking short positions decreases artificiality directly contradicts Plaintiffs' theory of the case – yet another self-contradiction inexcusably offered to avoid the impact of an earlier self-contradiction, all probative of the fundamental unreliability of Plaintiffs' experts' *methods*. (Proposed Response Part II.C.)

Courts routinely permit parties to file sur-reply briefs to complete the record where a reply brief raises new or misleading arguments, as is the case here. *See, e.g.*, *National Production Workers Union Ins. Trust v. Life Ins. Co. North Am.*, No. 05-cv-5415, 2010 WL 1292429, at *1 n.3 (N.D. Ill. Mar. 29, 2010) (*sua sponte* granting leave to file sur-reply because of new arguments in a reply brief); *Flory v. Mays*, No. 06 C 3523, 2007 WL 4232781, at *3 (N.D. Ill. Nov. 26, 2007) (observing that leave was granted to file sur-reply where new arguments were raised in reply); *cf. Mercatus Group LLC v. Lake Forest Hosp.*, 528 F. Supp. 2d 797, 809 n.7 (N.D. Ill. 2007) (granting leave to file sur-reply *even where no new arguments were raised in reply*). In granting leave to file a sur-reply, courts also consider the importance of the issues being addressed to the matter before the court. *See, e.g., Perry v. Novartis Pharm. Corp.*, 564 F. Supp. 2d 452, 455 n.1 (E.D. Pa. 2008) (court considered parties' reply and sur-reply in its analysis regarding motion to exclude Plaintiffs' experts' testimony on causation in part "because of the importance of the issue at hand"). Plaintiffs concede in their motion for leave to file the "reply" brief (at 1) that the issues addressed go to the matter before the court, and their importance weighs in favor of granting Defendants' request for leave to file the attached proposed response.

Conclusion

For the foregoing reasons, Defendants respectfully request that the Court grant them leave to file the response brief attached hereto as Exhibit A.

Dated: May 4, 2010

Respectfully submitted,

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EXHIBIT A

PIMCO'S AND PIMCO FUNDS' SUR-REPLY TO PLAINTIFFS' OBJECTIONS TO MAGISTRATE JUDGE KEYS' MEMORANDUM OPINION AND ORDER, DATED MARCH 10, 2010, EXCLUDING CERTAIN TESTIMONY OF PLAINTIFFS' EXPERT WITNESSES

AND

APPENDIX OF EXHIBITS THERETO

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

JOSEF A. KOHEN, BREAKWATER TRADING LLC, and RICHARD HERSHEY, Plaintiffs, v. PACIFIC INVESTMENT MANAGEMENT COMPANY LLC, and PIMCO FUNDS, Defendants.	:	No. 05 C 4681 Honorable Ronald A. Guzman Magistrate Judge Arlander Keys

PIMCO'S AND PIMCO FUNDS' SUR-REPLY TO PLAINTIFFS' OBJECTIONS TO MAGISTRATE JUDGE KEYS' MEMORANDUM OPINION AND ORDER, DATED MARCH 10, 2010, EXCLUDING CERTAIN TESTIMONY OF PLAINTIFFS' EXPERT WITNESSES

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Defendants Pacific Investment Management Company LLC ("PIMCO") and PIMCO Funds (together "Defendants") respectfully submit this memorandum in further response to Plaintiffs' Objections (hereafter "Ob.") to Magistrate Judge Keys' Memorandum Opinion and Order dated March 10, 2010 (hereafter "Order") excluding certain testimony of Plaintiffs' expert witnesses.

Argument

I. PLAINTIFFS CANNOT JUSTIFY THEIR FAILURE TO SEPARATE THE IMPACT OF LAWFUL CONDUCT FROM ALLEGEDLY UNLAWFUL CONDUCT.

Plaintiffs' "reply" brief makes a number of misleading arguments and misstatements of law and fact, all in an apparent attempt to sow confusion and distract from the fundamental and clear flaws in their experts' analyses. Although the misstatements and omissions are so fundamentally at odds with basic facts – or with Plaintiffs' own theories – as to require Defendants to respond to some of these arguments in Part II below, the Court need not resolve any of them in order to determine that the Magistrate Judge's Order should be affirmed. That is because there is one simple yet fatal flaw in Plaintiffs' experts' analyses that Plaintiffs did not even attempt to justify or refute in their Objections. Specifically, as the Magistrate Judge held, Plaintiffs' experts do not even *purport* to isolate the impact (if any) of PIMCO's allegedly wrongful conduct from the impact of its lawful conduct. Under established law, as the Magistrate Judge correctly held, their experts' causation opinions are therefore inadmissible under *Daubert*. (*See* Order at 16-19, 24-25.) In their reply brief, Plaintiffs do not dispute that their experts failed to distinguish the impact of lawful conduct from that of allegedly unlawful conduct, but seek to justify this failure with two new arguments. One is based on a misstatement of the undisputed facts, and the other is based on a mischaracterization of established law.

First, Plaintiffs assert that "It is a Disputed Fact Whether Defendants Engaged in Any Lawful Conduct." (*See* Reply at 8-10.) That is simply not true. Plaintiffs' experts have already admitted – as they must – that a substantial part of PIMCO's position was *not* wrongful.[1] For example, Merrick testified that PIMCO could have legitimately moved out of the June contract at a "leisurely" pace. (Exhibit 1 hereto: First Merrick Dep. at 297-302.) Indeed, both Pirrong and Merrick testified that PIMCO could have taken substantial *deliveries* without being manipulative. (Exhibit 2 hereto: First Pirrong Dep. at 89:8-9 ("Well, in my opinion, something on the order of 60,000, 70,000, maybe somewhat less would have been definitely not excessive."); Exhibit 3 hereto: Second Merrick Dep. at 264:13-18 ("Even if you kept 48,000 of June available to take delivery . . . they'd be responsible and non-manipulative."), 278:11-21 (testifying that 70,000 deliveries was "probably the maximum amount" that would have been non-manipulative).)

Second, Plaintiffs assert that it is "unnecessary, if not impossible" to present a causation analysis specific to the allegedly wrongful conduct, quoting *In re Linerboard Antitrust Litig.*, 497 F. Supp. 2d 666, 683 (E.D. Pa. 2007), *quoting LePage's Inc. v. 3M*, 324 F.3d 141, 166 (3d Cir. 2003). (Reply at 10.) However, Plaintiffs mischaracterize both *Linerboard* and *LePage's*. *Linerboard* (an antitrust case) *did* require the plaintiffs to "isolate[] defendants' alleged collusive behavior as the cause of the alleged overcharge." 497 F. Supp. 2d at 680-82. *Linerboard* held only that the plaintiffs were not further required to isolate the particular impact of each of several allegedly illegal acts. *Id.* at 683. Similarly, in *LePage's*, the plaintiff *did* construct a but-for model that isolated the effect of the alleged wrongdoing. 324 F.3d at 165. Neither *Linerboard*

[1] The bulk of Section D of the Reply (at 8-10) is devoted to knocking down the strawman argument that a history of lawful conduct gives "license" to engage in unlawful conduct. Defendants' point, which Plaintiffs cannot contest, is that PIMCO is a major legitimate investor in Treasury notes and futures, quarter after quarter and year after year, and that Plaintiffs simply have no basis to suggest that PIMCO should have had *no* position in the June contract, as their analyses assume.

nor *LePage's* suggest that a plaintiff need not demonstrate that the alleged harm was caused by the unlawful as opposed to lawful conduct of the defendant. This is consistent with Seventh Circuit law. *See MCI Comms. Corp. v. Am. Tel. & Tel. Co.*, 708 F.2d 1081, 1161 (7th Cir. 1983) ("It is a requirement that an antitrust plaintiff must prove that his damages were caused by the *unlawful* acts of the defendant.") (emphasis in original).

II. PLAINTIFFS' REMAINING "REPLY" ARGUMENTS ARE WRONG.

A. Plaintiffs Fundamentally Mischaracterize PIMCO's "Long-Long" Position and Thereby Again Fail to Justify Avoiding the Need for a Quantitative Rigorous Analysis.

Plaintiffs seek to avoid the requirement that their experts offer some testable theory by asserting that PIMCO was both "long" the futures contract and "long" the deliverable and that parties that are "long-long" have "unfailingly" been found to have manipulated prices upward. (Reply at 7.) This is misleading because PIMCO, unlike the defendants in the cases Plaintiffs cite, *did not* control even the deliverable notes that it nominally held – because PIMCO substantially surrendered its position in the CTD notes to the market through repurchase agreements ("repos"), to the extent of having *negative* net holdings of the CTD for half of the delivery month. (Exhibit 9 hereto: Pirrong Rebuttal Report Ex. R8.) This enabled the *shorts* to have "physical" control and the ability to make deliveries.[2] *See In re Fenchurch Capital Mgmt., Ltd.*, CFTC No. 96-7, 1996 WL 382313, at *2 (CFTC July 10, 1996) ("Shorts who do not already own the security use the repo market rather than the cash market to acquire the particular

[2] *Cf. Cargill, Inc. v. Hardin*, 452 F.2d 1154, 1165 (8th Cir. 1971) (noting that Cargill physically held "practically all" of the deliverable supply of wheat in Chicago warehouses); *G. H. Miller & Co. v. United States*, 260 F.2d 286, 289 (7th Cir. 1958) (noting that the defendants had physical control of the deliverable eggs, such that futures shorts wishing to make delivery were forced to buy the deliverable supply from the defendants); *In re Landon V. Butler*, 14 Agric. Dec. 429, 435 (CEA No. 65, June 20, 1955) (noting that the defendants caused the deliverable soybeans to be made "unavailable for delivery on futures"); *Great Western Food Distributors v. Brannan*, 201 F.2d 476, 478 (7th Cir. 1953) (noting that defendants "purchased and held" large quantities of the deliverable eggs and then "offered [them] for sale only at prices which made it unduly costly for shorts to purchase them for delivery"). Indeed all of these cases involved physical commodities in which repo markets were not at issue.

security needed for delivery on a futures contract. . . . *The repo market is, therefore, the common source of supply of notes for delivery on government securities futures contracts*.") (emphasis added).

Indeed, Plaintiffs' own expert Merrick has recognized the "squeeze-ending" potential of repo lending. (*See* Exhibit 5 hereto: John J. Merrick Jr., et al., "Strategic Trading Behavior and Price Distortion in a Manipulated Market: Anatomy of a Squeeze," at 214-15 (describing the "squeeze-ending" offer by the Bank of England to make underlying securities available to shorts on overnight repo.). *Compare Fenchurch*, 1996 WL 382313 at *1 ("Fenchurch exacerbated the tightness in the supply of the cheapest-to-deliver notes by increasing its position and intentionally *withholding the notes from the market*") (emphasis added).

Moreover, contrary to Plaintiffs' assertion that PIMCO somehow ignored the CBOT's warnings, PIMCO was in fact doing exactly what the regulators requested by making its CTD notes available in the repo market. (*See* Exhibit 6 hereto: June 8, 2005, letter from CBOT to PIMCO (stating that the CBOT "expects that PIMCO will make available in the repo market, through the contract's last delivery date, all of the cheapest to deliver security it has available").)[3] Accordingly, the regulators, like Plaintiffs' experts, recognized the utility of making notes available on repo.[4]

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[3] In making this argument, Plaintiffs are, once again, making statements about the regulators that contradict what they actually did, a form of misleading argument that the Magistrate Judge already had occasion to point out in his Order (at 7-8).

[4] Plaintiffs also argue that Defendants' distinction of *In re DiPlacido*, No. 01-23, 2008 WL 4831204 (CFTC Nov. 5, 2008), is somehow insufficient. Defendants' point is that unlike in *DiPlacido*, the alleged manipulative conduct is not conduct that by definition had an obvious direct effect on price. Hyperbolic references to "flagrant violations" (Reply at 5) by PIMCO are simply unsupported by the record and irrelevant here. More broadly, Defendants do not here respond to all of Plaintiffs' inaccurate statements and misrepresentations of the record because to do so would require many pages of briefing, and these reiterations of Plaintiffs' version of the facts are simply irrelevant to the issue before the Court.

B. Plaintiffs Concede That Pirrong's Predictive Regression Does Not Show Causation, and Their New "Two-Step" Argument Is Unavailing.

Originally, Plaintiffs asserted that Pirrong's predictive regression, standing alone, proved PIMCO "*caused* statistically significant, truly abnormal deviations in June Contract prices." (Ob. at 2-3 (emphasis added).) Plaintiffs have now conceded, as they must, that Pirrong's predictive regression did no such thing, but rather is simply an "estimate" of artificiality. (Reply at 3-4.) Plaintiffs now argue that it was just the first part of a "two-step" analysis, the second part of which is Pirrong's "contemporaneous correlation" analysis of daily price changes. (Reply at 3-4.)

As an initial matter, Plaintiffs concede, as they must, that mere correlation does not prove causation. (Reply at 14.) Moreover, Plaintiffs' own theory is that "causation of the artificial price is not necessarily correlated with the time of trades." (Ob. at 6; *see also id.* at 4 n.5 and 6 n.6.) Accordingly, under Plaintiffs' own theory, a showing of "very high co-movement of changes in [Defendants'] positions and changes in price artificiality" (Reply at 14) would simply be irrelevant.

Finally, unable to defend their experts' analyses on the merits, Plaintiffs resort to outright misrepresentations. Specifically, they quote Defendants' expert Hartzmark as supporting their experts' failure to link artificiality to PIMCO's allegedly wrongful conduct. (Reply at 13.) However, the quotation Plaintiffs attribute to Hartzmark is in fact from the deposition of their *own* expert, Professor Gilbert. (Exhibit 4 hereto: Second Gilbert Dep. at 35:13-16.) What *Hartzmark* said is that Plaintiffs' experts failed to isolate the impact of PIMCO's allegedly wrongful conduct from other factors (including PIMCO's lawful conduct) because "none of the plaintiffs' experts provides a counterfactual or the but-for world, in which PIMCO makes no

allegedly manipulative trades." (Exhibit 7 hereto: Hartzmark Rebuttal Report ¶ 175.)[5] The very flaw Hartzmark describes is illustrated by the Plaintiffs' admitted failure to test for non-challenged positions (*see* Section I above), but because Plaintiffs delete Hartzmark's own words and present him as the author of what is actually Gilbert's statement, Plaintiffs' assertion misleads in this additional critical respect as well.

C. Plaintiffs' New Argument Concerning the Impact of Taking Short Positions Not Only Fails, but It Directly Contradicts Their Theory of the Case

Plaintiffs argue that the Other Large Trader decreased artificiality by opening additional short positions in the futures contract in the face of concern about the availability of deliverable supply.[6] This new argument directly contradicts Plaintiffs' core theory of the case – that artificiality was caused by a reduction in the available supply of deliverable notes relative to large open interest in the face of a perceived threat that shorts would be required to deliver. Plaintiffs have offered no support for the illogical proposition that taking additional short positions could ever decrease artificiality in the world they describe, and they have consistently argued that reducing the available supply of the CTD causes artificiality. It is undisputed that the Other Large Trader's net effect on the market, whether by boxing its CTD's, borrowing more, or *adding* short positions to "justify" withholding the scarce supply of the CTD, was to reduce the available supply of the CTD. Thus under Plaintiffs' own theory, the Other Large Trader's

[5] Plaintiffs also argue that Defendants' experts endorsed the use of Granger analysis to demonstrate causation. (Reply at 15.) In fact, however, Defendants' experts only ever performed any Granger analysis at all because Plaintiffs' expert Gilbert suggested it. (*See* Exhibit 7 hereto: Hartzmark Rebuttal Report ¶ 43; Exhibit 8 hereto: Hanke Report at 14-15.) Furthermore, Defendants' experts never suggested that Granger testing could ever be more than a "starting point." (*See* Hanke Report at 15.) Defendants have certainly never suggested that Granger testing was a reliable way to demonstrate causation.

[6] Plaintiffs assert that Defendants' argument that the withdrawal of CTD notes by the Other Large Trader caused price artificiality is "new." (Reply at 4.) In fact, that argument was expressly made to the Magistrate Judge, and the Plaintiffs simply failed until now to respond to it. (PIMCO's Reply Memorandum in Support of Motion to Exclude Certain Expert Testimony of Craig Pirrong dated November 12, 2009, at 7.)

conduct could only have contributed to, not reduced, artificiality. This is not a matter of reasonable or "fact-centered" disagreement (Reply at 4); it is a simple self-contradiction, inexcusably offered to avoid the impact of an earlier self-contradiction, all probative of the utter unreliability of Plaintiffs' experts' *methods*. *See, e.g.*, *Daubert v. Merrell Dow Pharms*., 509 U.S. 579, 591 (1993) ("[S]cientific validity for one purpose is not necessarily scientific validity for other, unrelated purposes."); *Chapman v. Maytag Corp.*, 297 F.3d 682, 687 (7th Cir. 2002) ("The second part of the *Daubert* analysis requires the district court to determine whether the evidence or testimony assists the trier of fact in understanding the evidence or in determining a fact in issue. In other words, the suggested scientific testimony must 'fit' the issue to which the expert is testifying.") (internal quotations and citations omitted).

D. Plaintiffs' New Cases Confirm That Plaintiffs' Experts Are Required to Account for Major Factors.

Plaintiffs' citations of *Bazemore v. Friday*, 478 U.S. 385 (1986) – and other cases following *Bazemore* (Reply at 3 n.2), none of which was cited in Plaintiffs' Objections and most of which were not even cited to the Magistrate Judge – continue to undermine, not support Plaintiffs' assertions. Those cases make clear that any analysis must account for all major factors.[7]

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[7] *Cullen v. Indiana Univ. Bd. of Trustees*, 338 F.3d 693, 701 n.4 (7th Cir. 2003) (citing *Bazemore* for the proposition that an analysis that *does* account for other major factors is admissible); *Cement-Lock v. Gas Tech Inst.*, 618 F. Supp. 2d 856, 870-71 (N.D. Ill. 2009) (noting only that the expert was under no obligation to exclude "*every other possible explanation* for the devaluation" and not disturbing *Bazemore*'s requirement that experts eliminate "major, obvious factors") (emphasis added); *Superior Aluminum Alloys, LLC v. U.S. Fire Ins. Co.*, No. 1:05-CV-207, 2007 WL 1850860, at *11-*12 (N.D. Ind. June 25, 2007) (permitting expert analysis that "ruled out other possible causes of the run-out" at issue, even where the expert failed to account for a secondary feature of a particular structure (insulation around a furnace)); *U.S. ex rel. Tyson v. Amerigroup Illinois, Inc.*, 488 F. Supp. 2d 719, 733 (N.D. Ill. 2007) ("[A]n expert's causation conclusion should not be excluded because he or she has failed to rule out *every possible alternative cause*.") (emphasis added) (quoting *Lauzon v. Senco Products, Inc.*, 270 F.3d 681, 693 (8th Cir. 2001); *In re Sulfuric Acid Antitrust Litig.*, 446 F. Supp. 2d 910, 923-24 (N.D. Ill. 2006) (allowing expert analysis where the alleged error would potentially affect only a small fraction of an analysis concerning an extended 15-year period of time and did not invalidate the utility of the data for

Conclusion

For the foregoing reasons, PIMCO and PIMCO Funds respectfully request that the Court affirm the Order of the Magistrate Judge.

Dated: May 4, 2010

Respectfully submitted,

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other periods); *Gerlib v. R.R. Donnelley & Sons Co.*, No. 95 C 7401, 2001 WL 1313794, at *13 (N.D. Ill. Oct. 26, 2001) (allowing expert analysis where opposing party did not allege that analysis failed to consider obvious or major alternative causes).

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UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
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JOSEF A. KOHEN, BREAKWATER TRADING LLC, and RICHARD HERSHEY, Plaintiffs, v. PACIFIC INVESTMENT MANAGEMENT COMPANY LLC, and PIMCO FUNDS, Defendants.	No. 05 C 4681 Hon. Ronald A. Guzman

APPENDIX OF EXHIBITS TO PIMCO AND PIMCO FUNDS' SUR-REPLY TO PLAINTIFFS' OBJECTIONS TO MAGISTRATE JUDGE KEYS' MEMORANDUM OPINION AND ORDER, DATED MARCH 10, 2010, EXCLUDING CERTAIN TESTIMONY OF PLAINTIFFS' EXPERT WITNESSES

Exhibit 1: Excerpt from the First Deposition of John J. Merrick, Jr. on March 29, 2007

Exhibit 2: Excerpt from the First Deposition of Craig Pirrong, Ph.D. on March 27, 2007

Exhibit 3: Excerpt from the Second Deposition of John J. Merrick, Jr. on July 16, 2007

Exhibit 4: Excerpt from the Second Deposition of Christopher L. Gilbert on July 19, 2007

Exhibit 5: John J. Merrick, Jr., Narayan Y. Naikb, Pradeep K. Yadavc, "Strategic Trading Behavior and Price Distortion in a Manipulated Market: Anatomy of a Squeeze"

Exhibit 6: Letter dated June 8, 2005, from the CBOT Business Conduct Committee to PIMCO

Exhibit 7: Excerpt from the Rebuttal Report of Michael L. Hartzmark, Ph.D. dated August 24, 2007

Exhibit 8: Excerpt from the Report of Steve H. Hanke dated April 20, 2007

Exhibit 9: Exhibit R8 from the Rebuttal Report of Craig Pirrong, Ph.D. dated May 21, 2007

EXHIBIT 1

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

JOSEF A. KOHEN, BREAKWATER)
TRADING, LLC, and RICHARD HERSHEY,)
Plaintiffs,)
vs.) No. 05 C 4681
PACIFIC INVESTMENT MANAGEMENT)
COMPANY, LLC, and PIMCO FUNDS,)
Defendants.)

\- CONFIDENTIAL PURSUANT TO PROTECTIVE ORDER -

The deposition of JOHN J. MERRICK, JR., called as a witness for examination, taken pursuant to the Federal Rules of Civil Procedure of the United States District Courts pertaining to the taking of depositions, taken before PAULINE M. VARGO, a Notary Public within and for the County of DuPage, State of Illinois, and a Certified Shorthand Reporter of said state, C.S.R. No. 84-1573, at Suite 3700, One South Dearborn Street, Chicago, Illinois, on the 29th day of March, A.D. 2007, at 9:00 a.m.

the repo market, those could generate market color?

MS. WEDGWORTH: Objection.

BY THE WITNESS:

A. In the same way that any -- I think if you had a trade and any important trade could generate market color, I agree.

BY MR. NISSEN:

Q. And in your view, would the trades of any trader that's turned his real money generate market color?

A. Again, what's going to generate market color is the important trades of the day. So if you are doing an important trade that everybody needs to know about the flow, it will generate market color, so we are now to the subset of people who have done important trades.

Q. Do you have an opinion -- or strike that. What is your opinion as to at what point in time PIMCO should have liquidated its entire futures position?

A. I am happy that you gave me an open-ended question, and I will repeat the answer I had earlier.

When they -- when their bottom analysis

was that someone was squeezing the September contract came up and they did their analysis and sat down and started discussing on May 9th, the result of that discussion should have been "We have to move out of futures and into other issues. Let's start because there is no payoff to waiting."

So a reasonable portfolio manager at that point would have started doing basis trades out of June into other issues and continued in a leisurely pace doing the trades they thought were reasonable, and come time to the roll week, roll, and continue doing those trades until they got out of futures. That's how I view the market.

Futures have been very, very good to PIMCO over the years. Here is one situation where they are not so good. It's time to move out, and just do it in a professional way that's responsible to the market. They chose to engineer a squeeze, and it's dishonorable contact -- conduct, and we are here today because of that.

Q. By what date is it your opinion PIMCO should have been totally out of futures contracts?

A. I wouldn't even have done -- I would not set a date. I think responsible behavior could

have been to lighten the load dramatically from May 9th into the roll week and then just roll into September and then start moving out. So, I mean, that would have been a reasonable trading strategy.

Q. When is the roll week?

A. I would say it's probably, let's say, the last ten days of the month and could go into the -- you know, mid month things start. It could go into the beginning of June as well, there would be some liquidity, but I would say probably in this case, it probably started, you know, after the 15th. Say the 15th.

Q. The roll week started the 15th?

A. I am going to give you two weeks. But let's say starting the 15th there would have been some interest in doing rolls and then maybe from the 20th on, probably more activity.

Q. Well, you used the term "roll week," which sounded like it's a term that is used.

A. The period in which there is some liquidity in the roll, and I think I could pinpoint it if we had data. Certainly if we had data where the open interest crossed from June to -- actually, I have got here.

I am just going to think in my head, so don't type.

So total open interest in June started to decline 32 days prior to the last day of trading, so that would be 21 days of June and 11 days. So let's say May 20 is when open interest in June started to go down total, so I would say that's when people started rolling, May 20.

Q. So your testimony, even though you used the term "roll week," it's more than a week?

A. I would say it's a period. Let's just say a period.

Q. But is "roll week" a term that's used in the industry?

A. I think the roll period. I am going to pass on that question. I will just say when the roll is done, and in this case from the 20th to the end of the month is probably -- is probably the time. It probably is used, but it's late in the day. Sorry.

Q. So your testimony is PIMCO should have liquidated between May 9 and May 20, and then during this roll period from May 20 to the end of May, they should have liquidated entirely, is that

your testimony?

MS. WEDGWORTH: Objection.

BY THE WITNESS:

A. That's not my testimony. My testimony was there was a clear alternative that a responsible long who has a huge position could have enacted, and that would have been at the time they figured out that September was not a place that they wanted to be, begin the process of moving out of June futures into a variety of other assets, and that's what a responsible long would do.

I don't think I have to put any dates on anything except that whatever the market gave you in terms of good executions to move from June futures to other interesting assets, do it, and then when you come into the latter part of May, you have the opportunity to move from June into September and then continue doing basis trades out of September into whatever assets that you were interested in.

So there is no -- I guess in my view, there is no time limit in terms of PIMCO's ability to get out of futures and into attractive cash assets.

BY MR. NISSEN:

Q. So you have no opinion as to whether -- well, first of all, is it your opinion PIMCO should have liquidated all of its futures positions in the June contract rather than take delivery on any of them?

A. I don't think it's a part of their business to take delivery on a small part of a futures contract, a small part of the futures contract. I mean, it is one of the options they had.

If they took a responsible share of the average amount of deliveries, that's fine. It's typically not their -- I would think that someone who is a major player, that would not be the first thing that they would -- well, I take it back. Taking a responsible amount of delivery in an average total delivery cycle is certainly something they could have done.

Q. But what is it in your opinion that PIMCO should have done so as not to have engaged in the manipulation that you say they engaged in with respect to the short futures position?

A. With respect to their long futures

position.

Q. Yes. Let me rephrase. I am just looking for the date by which -- and haven't you given the opinion that they had ample opportunity?

A. Yeah, that's what I have been saying. Starting on May 9th they had ample opportunity. If you want me to be specific, I will say that one scenario, one scenario is that starting on May 9th they should have been selling their -- begin basis trading out of June futures into a set of different assets, perhaps some Treasury assets, perhaps some mortgage assets, corporate assets, swaps, and then in the middle of the roll week, which we now might say is -- or then during each day of this roll period beginning May 20th, move whatever remainder into September contracts temporarily, and then by the time that September is the front month, continue to be in the liquid part of the futures contract and then continue to do this move out of futures and into cash.

Q. So under that scenario would PIMCO have liquidated all its futures before June 1st, 2005?

A. It need not to. Oh, their June futures?

Q. Yes.

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A. I would say by that time you would have had the opportunity to do the roll, and so in my world I would have been in the front month by the time the front month was front.

Q. Given the fact -- or let's assume the fact that Citadel was going to make delivery on 75,000 contracts plus because it had the securities in the box, it had the short futures contracts. Then if you assume that Citadel was going to make those deliveries, then someone would have had to take 75,000 contracts from Citadel; isn't that right?

A. I'd start from scratch. If on May 9th PIMCO went through the scenario I suggested, the futures would be perfectly priced off the cheapest-to-deliver, Citadel would not be interested in selling any more, adding to their short futures positions and making delivery or boxing the bonds. None of that would have happened.

Q. That's not my question. I am asking you to assume that Citadel was going to deliver 75,000 contracts, which is what they did in the real world, and I am asking you if you make that

EXHIBIT 2

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

JOSEF A. KOHEN, BREAKWATER)
TRADING LLC, and RICHARD HERSHEY,)
Plaintiffs,)
vs.) No. 05 C 4681
PACIFIC INVESTMENT MANAGEMENT)
COMPANY LLC, and PIMCO FUNDS,)
Defendants.)

THIS DEPOSITION CONTAINS CONFIDENTIAL INFORMATION

The deposition of CRAIG PIRRONG, Ph.D., called for examination, taken pursuant to the Federal Rules of Civil Procedure of the United States District Courts pertaining to the taking of depositions, taken before KRISTIN C. BRAJKOVICH, a Certified Shorthand Reporter, CSR. No. 84-3810, of said state, at Suite 3700, One South Dearborn Street, Chicago, Illinois, on the 27th day of March, A.D. 2007, at 9:04 a.m.

BY THE WITNESS:

A. Yes. As arguably the most efficient deliverer in the marketplace or one of the most efficient deliverers, by holding on to this note, it was more costly for other less efficient deliverers to make delivery.

BY MR. NISSEN:

Q. What are too few futures contracts to liquidate, as referred in paragraph 32 of your written report?

A. Well, essentially, liquidations and deliveries are the mirror image of one another. If one takes too many deliveries, given the size of one's position, that means one has liquidated too few contracts. Differently from an economics perspective, the price of the contract liquidated is in excess of the marginal value of what is delivered. That would be a clear indicia of excessive deliveries and, similarly, liquidation of an insufficient number of contracts.

Q. What was the number, in your opinion, for the June 2005 contract that constituted excessive deliveries?

A. The deliveries that were made were

excessive, in my opinion, of 132,000 or more than that. I'll have to look in the report to get the exact number, but more than 130,000-some contracts. In my opinion, that was an excessive number of deliveries.

Q. And what was the largest number that would not have been excessive?

A. Well, in my opinion, something on the order of 60,000, 70,000, maybe somewhat less would have been definitely not excessive.

Q. So in the March '05 contract, was taking delivery of more than 70,000 excessive?

A. Yes. In my opinion, there was indicia that the March price was high. In particular, that the marginal value, early March futures contract was higher than the marginal value of what was delivered against the March contract.

Q. And so the party that took delivery in the March contract, in your opinion, took excessive deliveries; is that right?

MS. WEDGWORTH: Objection.

BY THE WITNESS:

A. Again, in my opinion, there were excessive deliveries on that contract, that

deliveries were taken that were uneconomic, and so yes.

BY MR. NISSEN:

Q. And, to your knowledge, there has been no charge by any regulatory authority of manipulation of the March '05 contract, has there?

A. Not to my knowledge, no.

Q. And how does one, when one is deciding whether to liquidate, decide whether the marginal cost for someone else is greater?

MS. WEDGWORTH: Objection.

BY THE WITNESS:

A. The marginal cost of what verse who else is greater? I'm just asking you to be -- I want to make sure that my answers are very responsive and very informative, so if I ask for clarification, it is not to annoy you, sir. It is to try to make sure that I'm answering the question that you really want to ask.

BY MR. NISSEN:

Q. You testified that deliveries become excessive when the marginal costs of getting the deliverable goes up; is that right?

A. That's not what I testified.

EXHIBIT 3

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

JOSEF A. KOHEN, BREAKWATER)
TRADING, LLC and RICHARD)
HERSHEY,)
Plaintiffs,)
vs.) No. 05 C 4681
PACIFIC INVESTMENT)
MANAGEMENT COMPANY, LLC,)
PIMCO FUNDS and JOHN DOES)
1-100,)
Defendants.)

C O N F I D E N T I A L

The deposition of JOHN J. MERRICK, JR., called as a witness for examination, taken pursuant to the Federal Rules of Civil Procedure of the United States District Courts pertaining to the taking of depositions, taken before VICTORIA C. CHRISTIANSEN, a Notary Public within and for the County of DuPage, State of Illinois, and a Certified Shorthand Reporter of said state, CSR No. 84-3192, at Suite 3800, One South Dearborn Street, Chicago, Illinois, on the 16th day of July,

to be manipulative. That's what I want to know.
If it's 24,000, if it's zero, whatever it is, please -- please give us --

A. Okay. Let me just think, just look through this.

(WHEREUPON, there was a short interruption.)

BY THE WITNESS:

A. Just on the back of the envelope, I would say if PIMCO took 48,000 contracts, that's a two standard error deviation from the -- let's assume the rest of the market takes 24,000, because that's what they do on average without PIMCO, and if we cede PIMCO the entire two standard error itself, that's 48,000 contracts.

I mean, to me, that's a large strategic trade, but it's certainly within the realm of the numbers. That would be again a very large total, and now we're up to 72,000 as the total deliveries, PIMCO taking two-thirds of it.

I don't -- you know, I would think that that would be a reasonable large delivery, unusual, not controlling.

I hope I answered.

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BY MR. NISSEN:

Q. Okay. So when in your opinion should PIMCO have reduced its total position to no greater than 48,000 contracts?

MS. WEDGWORTH: Objection.

BY THE WITNESS:

A. It's a very different -- I mean, it's -- again, I'm on the record to say that they should have been reducing their positions as of May 9, and by the time they got into the roll period, whatever they hadn't reduced I would have rolled the rest to September.

Even if you kept 48,000 of June available to take delivery, roll the rest then into September, and I think that would be very reasonable. It would be, you know, one way out of an unattractive situation to them and life would go on and they'd be responsible and non-manipulative.

BY MR. NISSEN:

Q. So it's your testimony that PIMCO should have been out of all but 48,000 contracts by May 31, is that correct?

MS. WEDGWORTH: Objection.

BY THE WITNESS:

A. We're talking about a general guideline which would be sensible to me as an ex-trader and someone who's evaluating manipulative vulnerability and so forth.

I'm not proscribing anything. I would think that's a very reasonable outcome that would make some sense, and certainly had they done that, they would have not had any of the -- the -- we wouldn't have seen any of these artificial crazy prices of 88 cents rich.

BY MR. NISSEN:

Q. But --

A. And again, I would also say that all of those unwinds would be in other Treasury bills, not the Feb 2012s. Having 4.8 billion of Feb 2012s would be enough. It would be double what they used to have -- more than double what they were -- their highest amount of CTD cash issue before from what's been represented to me.

Q. So it's your testimony that to be non-manipulative, PIMCO would not need to reduce its cash position on the February 2012 but should not increase it and should also reduce its futures contract by May 31 to 48,000 or less, is that

Q. Thank you.

Now, so the -- is it true, then, in your view, that taking more than 70,000 contracts into the delivery month was manipulative on the part of PIMCO?

MS. WEDGWORTH: Objection.

BY MR. NISSEN:

Q. Is that the case?

A. No. My -- I think we've got 70,000, if we want to retrace, as being the amount that they would -- sort of a maximum amount that would be consistent with taking delivery and maybe not be suspicious after the fact.

We've talked about deliveries. We did not talk about what we took into June. That's what we talked about, deliveries.

Q. But you testified, didn't you, that PIMCO should have reduced by May 31 its position to 70,000 contracts?

MS. WEDGWORTH: Objection.

BY THE WITNESS:

A. That was one of many plans.

I'll devise another plan for you. When do we want to have the 70,000? Give me a day and

then I'll do the math again.

BY MR. NISSEN:

Q. You're the one criticizing PIMCO. I'd like you to say --

A. I told you exactly what I'd do. You have 15 days, blow out 20,000 contracts a day.

Q. But I'm not asking for how you would do things; I'm asking: What do you view as non-manipulative by PIMCO?

A. And I --

Q. Assume PIMCO wants to take the maximum amount into delivery and maintain its options as long as possible.

What's the maximum amount -- and I think you've testified that 70,000 contracts is the maximum amount.

Is that wrong?

MS. WEDGWORTH: Objection.

BY THE WITNESS:

A. That's -- that's the -- I would say that's probably the maximum amount, yeah.

BY MR. NISSEN:

Q. And it's your opinion they should have, in order to be non-manipulative, been out of

everything but 70,000 by May 31, correct?
MS. WEDGWORTH: Objection.
BY THE WITNESS:
A. I think even -- I think they should have not done anything to signal their intentions about standing for a manipulative outsized delivery, so that's the first thing. They shouldn't have done anything that would have signaled intentions.
I've given them a plan. I've done some very simple calculations not with the idea of micromanaging but with the goal of getting down to that type of figure, and I think we just decided you could do that with 15,000 contracts a day to get down to 70 or do 20,000 contracts a day and get completely out of the position, and I think it's -- that's a very straightforward answer to your question.
I'm giving you numbers and I'm giving you days and I'm giving you a scenario. I can't give you anything more than that.
BY MR. NISSEN:
Q. So you can't say what the maximum contracts were that would be non-manipulative by PIMCO, is that right?

EXHIBIT 4

IN THE UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

JOSEF A. KOHEN, BREAKWATER)
TRADING LLC, and RICHARD HERSHEY,)
Plaintiffs,)
vs.) No. 05 C 4681
PACIFIC INVESTMENT MANAGEMENT)
COMPANY LLC, and PIMCO FUNDS,)
Defendants.)

THIS DEPOSITION CONTAINS CONFIDENTIAL INFORMATION

The deposition of CHRISTOPHER LESLIE GILBERT, called for examination, taken pursuant to the Federal Rules of Civil Procedure of the United States District Courts pertaining to the taking of depositions, taken before KRISTIN C. BRAJKOVICH, a Certified Shorthand Reporter, CSR. No. 84-3810, of said state, at Suite 3800, One South Dearborn Street, Chicago, Illinois, on the 19th day of July, A.D. 2007, at 8:04 a.m.

Q. We can look at it, but just as a general matter, do you recall saying that you would do a statistical analysis to show artificiality?

A. Yes.

Q. And have you done a statistical analysis to show artificiality here?

A. No.

Q. And why not?

A. Because I have not been asked by plaintiffs to do so.

Q. Are you offering an opinion that prices were artificial?

A. I'm offering a very specific opinion in this rebuttal report, and the specific opinion I'm offering is that plaintiffs -- sorry -- the defendants' actions were causally determinate of changes in the price of the June future, changes in the price of the February 2012 note, and the richness of the June future. That is the specific opinion I'm offering in this rebuttal report.

Q. And I understand that. We will get into those points.

As I read your class certification report, you said that you could conduct an analysis

to demonstrate artificiality. Am I correct that you have not studied artificiality to prove artificiality here?

A. I have not been asked to do that, and I have not done that.

Q. Now, in other manipulation cases, you use something called the but-for test?

A. Yes.

Q. What is a but-for test?

A. In those circumstances, I have built a model of the relevant market, and one of the components of that model has been the manipulators' allegedly manipulative positions. In the but-for test, one simulates the estimated model, setting the manipulative position's variable or variables to zero.

This then generates a price path, which one argues is the price which would have existed but for the manipulative actions.

Q. And is that -- have you used that but-for analysis in every other manipulation case that you have worked on?

A. No.

Q. In which ones haven't you?

A. There was a case in the British courts which, in relation to Sumitomo, in the period following June 1996 when the Sumitomo manipulation terminated. At that time Sumitomo asked Goldman Sachs to take over their large position in copper and to get rid of this in the least unprofitable way, shall we say, that was possible.

And Goldman Sachs did that over the subsequent nine months, and some market participants alleged that Goldman Sachs manipulated the London Metal Exchange, LME, copper market over that period, so from June 1996 to March 1997. And I looked at that, and I did not perform a but-for analysis in the way which I have outlined. Okay.

MR. GRUSH: Okay. I would like to mark as the next exhibit, 57, a copy of your deposition transcript earlier in this case.

(WHEREUPON, a certain document was marked Defendants' Deposition Exhibit No. 57, for identification.)

BY MR. GRUSH:

Q. Do you recognize Defendant Exhibit 57 as a copy of your deposition transcript from this

EXHIBIT 5

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Strategic trading behavior and price distortion in a manipulated market: anatomy of a squeeze ☆

John J. Merrick Jr[a,*], Narayan Y. Naik[b], Pradeep K. Yadav[c]

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Available online 23 February 2005

Abstract

This paper investigates an attempted delivery squeeze in a bond futures contract traded in London. Using cash and futures trades of dealers and customers, we analyze their strategic trading behavior, price distortion, and learning in a market manipulation setting. We argue that marked differences in settlement failure penalties in the cash and futures markets create conditions that favor squeezes. We recommend that regulators require special flagging of forward term repurchase agreements on the key deliverables that span futures contract maturity dates, and that exchanges mark-to-market

☆ We are very grateful to the Financial Services Authority (FSA) for providing us data on government bond dealers' positions and trades. We thank the Bank of England and Alfredo Bequillard of Lehman Brothers for providing Gilt price data. We are grateful to Centre for Hedge Fund Research and Education at the London Business School for financial support. We thank Sharon Dittrich and Munir Dauhajre of Merrill Lynch and Daniel Grumbacher of the CBOT for helpful discussions, and George Oldfield, William Silber, and Wanda Wallace for useful comments. We are grateful to Steve Figlewski, Francis Longstaff, Pete Kyle, Kjell Nyborg, Stephen Craig Pirrong, Ilya Strebulaev, Avanidhar Subrahmanyam, S. Viswanathan, John Whitmore, participants at the EFA 2002 meetings in Berlin, and WFA 2003 meetings in Los Cabos for many useful comments. We are thankful to Purnendu Nath and Rajesh Sivaraman for excellent research assistance. This research was undertaken while Pradeep Yadav was visiting the Stern School of Business at New York University 2001 to 2002 and the Anderson School of Business at UCLA 2002 to 2003.

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with access to uncollateralized sources of funds. In such circumstances, LIBOR should become the marginal financing rate in Equation (10). Since LIBOR is higher than the repo rate, the futures price should increase (rather than decrease) relative to that of the *cdi*1 during periods when squeeze concerns arise. Thus, evidence that LIBOR replaces repo as the relevant marginal financing rate during the squeeze episode provides a direct test of the valuation significance of the asymmetric penalties for failed settlements between cash and futures markets.

Fig. 9a plots three interest rate series: the general collateral repo rate, LIBOR, and the implied repo rate (i.e., the break-even financing rate implied by the relative prices

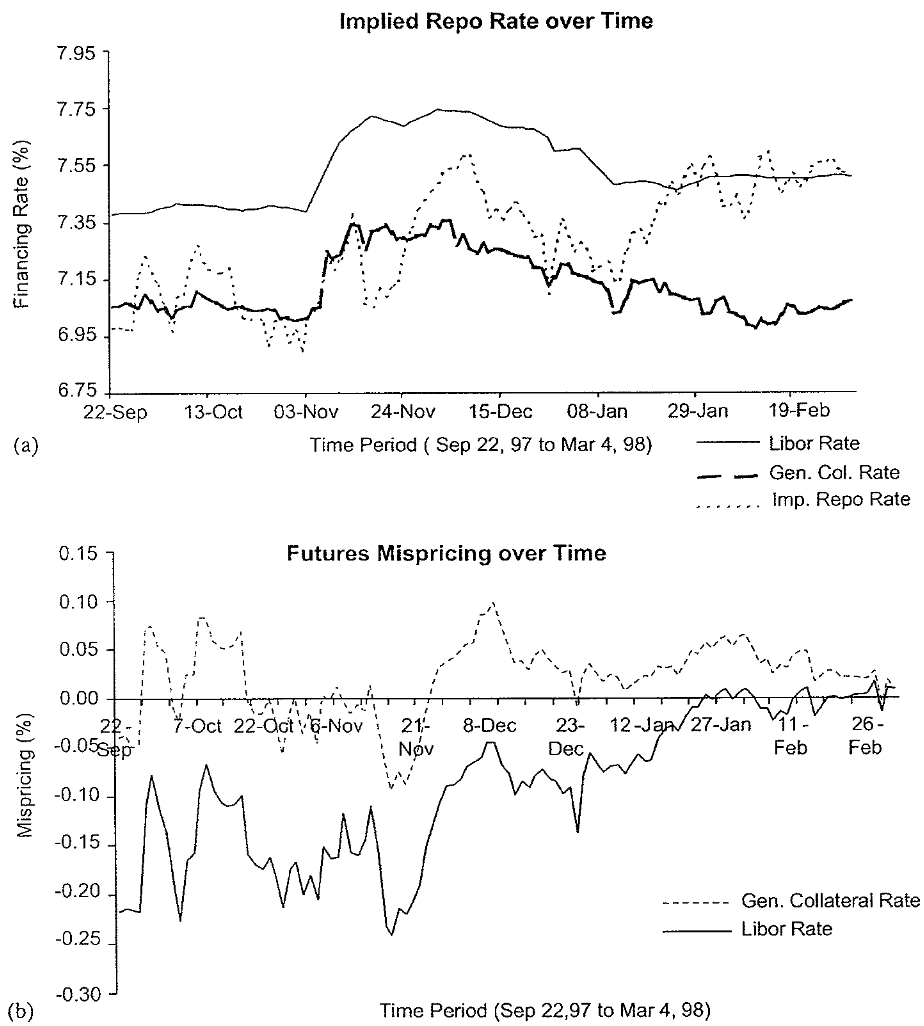

Fig. 9. (a) plots the LIBOR rate, the general collateral rate, and the implied repo rate (in %) during the sample period (from September 1, 1997 to March 4, 1998). (b) plots the mispricing of futures contract under two scenarios: first, when the financing rate is the general collateral rate, and second, when the financing rate is LIBOR.

of the *cdi*1 and March 98 futures). Up until January 20, 1998, the difference between the implied repo rate and LIBOR has a mean of −0.34% (t-statistic: 26.1). The difference between the implied repo rate and the general collateral rate has a mean of −0.05% (t-statistic: 4.06). After January 20, 1998, these mean differences equal −0.006 (t-statistic:−0.47) and 0.45 (t-statistic 30.4), respectively. Thus, up until January 20, 1998, the implied financing rate was slightly smaller than but significantly closer to the general collateral rate than LIBOR. Thereafter, instead of decreasing (as if the *cdi*1 had turned special due to futures-delivery related high demand), the implied financing rate increased and became statistically indistinguishable from LIBOR. This result clearly reveals that during the latter part of the squeeze, the marginal arbitrageurs financed their cash market position using an uncollateralized source of funding rather than the repo market.

Fig. 9b sheds more light on this issue by plotting two measures of futures mispricing based upon two alternative financing rates. The first measure assumes that the financing rate is the general collateral rate; the second measure uses LIBOR. After January 20, 1998, the March 98 futures contract appears overpriced relative to the repo-based funding calculations, while it seems to be fairly priced relative to the LIBOR-based funding calculation. The average daily overpricing with repo-based calculation equals 0.035% (t-statistic: 11.5) while that with LIBOR equals −0.002% (t-statistic: −1.35). These findings provide strong evidence of the importance of settlement nonperformance penalties in determining the behavior of arbitrageurs and market prices.

7.3. Squeeze-ending action by the Bank of England

Interestingly, the specific action taken by the Bank of England to end the squeeze also illustrates the importance of the differences in settlement nonperformance penalties between cash and futures markets in squeeze facilitation. Concerned about the distortions generated by the squeeze attempt, the Bank of England introduced an innovative noninvasive policy response via a temporary change in its repo policy. On February 16, 1998, the Bank of England released a press notice concerning "market developments in 9% Treasury Loan 2008 and the long gilt future contract on LIFFE". The following is an excerpt from that press notice:

> *The Bank of England continues to monitor market developments in 9% Treasury Loan 2008 and the long gilt future contract on LIFFE. It recognizes that there is concern that some market participants may fail to be delivered stock due for repurchase under repo agreements and intended for delivery into the long gilt future. In order to forestall any market disruption resulting from significant failed trades or returns, the Bank of England is prepared to make supplies of the stock available from 23 February, on overnight repo only, to any gilt-edged market maker (GEMM) who has been subject to a failed return or delivery of stock, or has a customer who has been subject to a failed return or delivery of stock. HM Treasury will issue further amounts of this stock for this purpose.... The repo rate applying to any stock made available through this facility will be 0%.*

Note the ingenuity of the Bank of England's offer. The fact that the repo rate on the newly available quantities of gilts was set at 0% did not change the profit or loss or other incentives for any dealer or customer versus the alternative of failing in cash market settlement. The incremental supply of bonds would simply replace any quantity cornered by the squeezers through strategic repo fails. Thus, the Bank of England's action was targeted narrowly at addressing the asymmetries between settlement nonperformance penalties in the cash and futures markets. As Fig. 2 shows, the price distortion, the butterfly yield spread, and the implied squeeze probability all fell towards their "normal" values after the Bank's announcement. The squeezers were relying on the exceptionally high costs of failing in the futures market to force shorts to capitulate as the delivery date approached. The Bank's narrow action removed futures delivery fail risk, eliminated the fear of the additional LIFFE delivery fail penalties, and ended the squeeze.

One puzzle does remain. While the 9% 2008 cash issue re-priced back towards normal no-squeeze equilibrium levels after the Bank of England's policy change, March 98 futures remained slightly overpriced relative to cash on the basis of the cash-and-carry arbitrage relationship. In Fig. 9b, the deviation of the futures price from its repo-generated cash-and-carry arbitrage value remained about +0.02% of par value. We interpret this as a premium that the market was willing to pay for an option on "irrational" March 9th delivery behavior. Recall that the 9% 2008 was no longer eligible for delivery after the March 9th delivery date. Once the 9% 2008's eligibility ended, the price of the March 98 futures would jump 2% to reflect the new deliverable: the 8% 2009. Apparently, some market participants were willing to overpay for March 98 futures even after the squeeze threat vanished in the hope that some contract shorts would "forget" to deliver on March 9, 1998. Speculators on delivery irrationality were willing to pay +0.01% to +0.02% of par value on a lottery ticket that had a potential payoff of +2.00% of par value. However, in the end, rational delivery behavior reigned. Indeed, 92,401 contract deliveries were made using the *cdi*1 prior to the close of its eligibility window. These deliveries absorbed an amazing 82.4% of the outstanding par value of *cdi*1. No cash market gilt fails occurred and the Bank of England's special repo facility was never used.

8. Concluding remarks

This paper examines the strategic trading behavior of major market participants during an attempted delivery squeeze in a bond futures contract traded on the LIFFE. Our study investigates both the price distortions and trading positions of major market participants involved in the market-manipulation episode and identifies the particular institutional features that give an important endgame advantage to squeezers in futures markets. We present empirical evidence on the strategic trading behavior of major market participants (both dealers and customers), and demonstrate how learning takes place in a market-manipulation setting. We document how market prices and market depth were distorted and estimate the profits of strategic traders during different phases of the squeeze.

Finally, we present evidence in support of implications of certain models of trading volume and short squeezes.

From a regulatory perspective, this paper has several messages. First, regulators and exchanges need to be concerned about ensuring that manipulative squeezes do not take place. Squeezes entail severe price distortions and also some erosion of market depth, both of which randomly penalize hedgers. Second, regulatory reporting should require flagging of trades such as the forward term repo trades on the key deliverable issues underlying the futures contracts. Under current reporting systems, these trades can go undetected. Third, exchanges and regulators should be concerned about the fact that the marked differences in the penalties for settlement failures in the cash and futures markets create conditions that engender squeezes. Finally, futures exchanges should remove the sources of opportunities for engineering squeezes. Towards this end, the exchanges should mark-to-market the specifications of their bond contracts much more frequently than they do at present, so that the prevailing market conditions do not differ dramatically from those assumed in the calculation of conversion factors. Moreover, the futures exchanges should explore the possibility of redefining their bond futures contract to be cash-settled on a basket of traded bonds, rather than requiring physical delivery against a contract specified on a bond with a notional coupon and maturity.

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EXHIBIT 6

June 8, 2005

Jim Keller
Pacific Investment Management Co.
840 Newport Center Dr.
Newport Beach, CA 92660

Fax: 949-718-2612

Dear Mr. Keller,

As you know, the staff of the Office of Investigations and Audits, in consultation with the Business Conduct Committee, has been closely monitoring the position held by PIMCO in the June 2005 Ten Year Treasury Note contract which expires on June 21, 2005.

PIMCO currently holds a large long position in the contract, representing in excess of 50% of the contract's open interest. PIMCO also holds significant repo and cash positions in the cash security that is cheapest to deliver into this contract.

Given the size and concentration of PIMCO's position, the Business Conduct Committee believes that the firm's conduct can have an impact on whether or not the June 2005 Ten Year Note contract expires and delivers in an orderly and economic fashion. Consequently, the Business Conduct Committee hereby advises PIMCO of its responsibility to use its best efforts to assist in the maintenance of an orderly market. The Committee expects that PIMCO is prepared to participate, and will fully participate, in the market at economic levels and that PIMCO will be able to clearly justify its economics at all times through the contract's last delivery date.

Additionally, the Committee expects that PIMCO will take no action that could reasonably be expected to limit or constrain the freely available supply of the cheapest to deliver security. Consistent with the representations PIMCO has made to the CBOT's regulatory staff, the Committee expects that PIMCO will make available in the repo market, through the contract's last delivery date, all of the cheapest to deliver security it has available.

PIMCO is reminded that CBOT Rule 509.00 prohibits the manipulation of prices as well as any attempt to corner the market in any security, and that Rule 500.00 prohibits any conduct inconsistent with just and equitable principles of trade. Additionally, Regulation 425.07, Position Accountability, requires that PIMCO initiate and liquidate its position in an orderly manner.

The Business Conduct Committee will continue to closely monitor PIMCO's position and actions, and expects that PIMCO will fully and promptly comply with all requests for information by this Committee or staff of the Office of Investigations and Audits.

For the Business Conduct Committee,

Jay Homan
Chairman

cc:
William Kokontis, CFTC

EXHIBIT 7

REBUTTAL REPORT OF MICHAEL L. HARTZMARK, PH.D.

IN

JOSEF A. KOHEN, BREAKWATER TRADING LLC,

and RICHARD HERSHEY

(PLAINTIFFS)

V.

PACIFIC INVESTMENT MANAGEMENT COMPANY LLC,

and PIMCO FUNDS

(DEFENDANTS)

IN THE UNITED STATES DISTRICT COURT

FOR THE NORTHERN DISTRICT OF ILLINOIS

EASTERN DIVISION

CASE NUMBER: 05 C 4681

Confidential Pursuant to Protective Order

42. The methodologies put forth by plaintiffs' experts in both their rebuttal and initial reports assume that reactions to market news are at most a linear function of maturity and that relative prices remain in lockstep. The regression results presented here demonstrate that this assumption is false. Hence, plaintiffs' methodology is not robust to the arrival of market news, and they have not taken into account much important economic information regarding the relative pricing of the 4 7/8 2'12 and TYM5, and their conclusions concerning the alleged artificiality of prices are unreliable.

IV. PIMCO DID NOT GRANGER-CAUSE VARIATIONS IN JUNE 2005 10-YEAR TREASURY NOTE FUTURES PRICES, 4 7/8 2'12 CASH PRICES OR ALLEGED ARTIFICIALITY

43. Pursuant to an early suggestion by plaintiffs' expert Professor Gilbert, evidence has been presented by both sides investigating the question of whether PIMCO's trading activity "Granger-caused" a change in the price of the June 2005 future. The Hanke report (p. 14-18) was the first to implement Professor Gilbert's suggestion (over the objections raised by Drs. Merrick and Pirrong as to the statistical power and relevance of the Granger causality testing methodology), and found that

a) "Plaintiffs have failed to demonstrate PIMCO's causation of the pricing observed in the Treasury market by any reasonable economic standard." (Hanke report, p. 67.)

b) "A test of PIMCO's causation of the pricing observed in the Treasury market during the proposed class period according to standards proposed by plaintiffs' own expert rejects the hypothesis that PIMCO caused prices to depart from their equilibrium levels." (Hanke report, p. 67.)

44. Now in their rebuttal reports Professor Gilbert and Dr. Pirrong present Granger causality analyses, which purport to overturn the conclusion reached by Dr. Hanke. I find that their results suffer from a number of errors related to their use of the data and the specification of their empirical models. Correct application of the Granger causality methodology shows that Dr. Hanke was correct that PIMCO did not Granger-cause an increase in futures prices. Similarly, PIMCO did not Granger-cause cash prices, richness or Dr. Pirrong's measure of alleged artificiality.

A. Discussion of Granger Causality Applied to this Matter

45. Granger causality is a statistical approach to forecasting that asks, generally speaking, whether the history of a variable (the independent variable) can improve the forecast of another variable (the dependent variable) versus a forecast of the same dependent variable that is based solely on its own history. Formally, an econometrician asks whether the statistical significance of an F-test statistic or Wald test allows the researcher to reject the null hypothesis that the coefficients on the lagged independent variables are equal to zero. Generally, the statistical test examines whether the F-statistic is significant at a 5 percent level.[30]

46. Granger causality is no more and no less than a test to determine statistically whether there is an improvement of forecast power when including the lagged independent variable(s). A statistically significant improvement in forecast power may be observed because the independent variable does indeed explain (or cause) variation in the dependent variable, but it may equally well be observed because the independent variable is an instrument or a proxy for an unobserved or otherwise unspecified factor that is the actual cause in the variation in the dependent variable. Granger causality, therefore, is not causation in the strict sense.[31]

47. Furthermore, Granger causality analysis does not explain *how* a given independent variable Granger-causes changes in a dependent variable. Thus in advance of implementing the Granger tests it is important to be able to ask the question of how variation in the independent variable affects the dependent variable, both as a means of deciding whether the independent variable

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[30] My definition is consistent with Professor Gilbert. (Gilbert rebuttal report, ¶3.)
[31] James H. Stock and Mark H. Watson, Introduction to Econometrics, Pearson Education, Inc. (2007), p. 547: "...Granger causality means that if X Granger-causes Y, then X is a useful predictor of Y, given the other variables in the regression. While 'Granger predictability' is a more accurate term than 'Granger causality,' the latter has become part of the jargon of econometrics."

4. *An Analysis of Barclays Transactions Show that Dr. Pirrong Overstates Damages*

170. Barclays has produced transactions records. I examine the transactions records of all accounts with the name "Barclay." It is less likely that Barclays proprietary accounts would have traded through other brokers, so I can be more confident that I have a complete record of their trading activity. There are other accounts; however, it is more likely that these customers traded through other brokers as well. Thus, I would be less confident that I have records on their complete trading activity.[128]

171. The results are presented in Exhibits 23.1 through 23.7. In every account, Dr. Pirrong's method far overstates the alleged damages. In four of the seven accounts, application of the alleged artificiality to both long and short transactions shows that overall the accounts actually benefited from the alleged artificiality. In the other three accounts the alleged damages were overstated by more than three times.

172. I aggregate the total alleged damages and the overstatement and calculate that under Dr. Pirrong's method alleged damages would be $19,059,854. However, using both long and short transactions and applying Dr. Pirrong's measure of alleged artificiality, I calculate that class members would have benefited by $3,423,193. Thus, Dr. Pirrong's approach overestimates damages by over $22.0 million.

173. Analysis of the records produced by the lead plaintiffs and third party Barclays shows that Dr. Pirrong's method dramatically overstates alleged damages. Application of the correct method clearly demonstrates that some

[128] Even if these accounts trade through multiple brokers, it is reasonable to believe the sample is representative of overall trading and we have not imposed a bias to our calculations.

class members – including lead plaintiff Mr. Hershey and many of the Barclays accounts -- are in fact beneficiaries of the alleged artificiality.

B. The Absence of a But-For World in Plaintiffs' Damages Calculation

174. To calculate damages the burden is on the Plaintiffs' to develop a meaningful "but-for" world to use as a benchmark for calculation.

175. In an earlier stage of the current matter, Plaintiffs' expert Professor Gilbert underlined the importance of conducting a 'but-for' or counterfactual exercise in order to determine what share of measured price artificiality in the June 2005 future is properly attributed to the actions of PIMCO. At that time, Professor Gilbert noted that "ascribing the whole of such a discrepancy to Defendants' [allegedly] manipulative behavior would … not be correct."[129] Yet, in their rebuttal reports none of the plaintiffs' experts provides a counterfactual or the but-for world, in which PIMCO makes no allegedly manipulative trades.

176. Overall, plaintiffs' experts totally fail to provide any method to benchmark or ascribe alleged damages, should they exist at all.

C. Plaintiffs do not attempt to decompose pricing anomaly into it economic and artificial components

177. Plaintiffs have not distinguished between what component of alleged richness is due to PIMCO's trading and what component is outside PIMCO's control. I have demonstrated -- using the methodology proposed by the plaintiffs' own expert -- that external economic factors are critically important in explaining the alleged artificiality. Plaintiffs have totally ignored and discounted the impact of external economic factors and therefore are unable to distinguish between the pricing anomaly that is based on economic richness (price

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[129] "In the but-for test, one simulates the estimated model, setting the manipulative position's variable or variables to zero." (Deposition of Gilbert, July 2007, 33:10-13.)

inflation) and that portion based on artificial richness (price inflation). Since the burden is on them to distinguish and decomposes these two fairly obvious effects and because properly distinguishing them shows that anomalous prices were not caused by PIMCO, no damages should be awarded.

VII. CONCLUSION

178. There is neither theoretical nor empirical evidence to suggest that PIMCO caused changes in prices, yields, richness or alleged artificiality.

179. The unusual pricing of the June 2005 futures is explicable in terms of an unprecedented combination of external economic factors in the U.S. credit markets.

180. Because the price anomaly is explained based on economic richness (not artificial richness) and economic price inflation (not artificial price inflation), and PIMCO's trading activity cannot be associated with any changes in the price anomaly it would be imprudent to suggest that damages are anything other than zero.

RESPECTFULLY SUBMITTED THIS TWENTY-FOURTH DAY OF AUGUST, 2007

Michael L. Hartzmark, PhD.
Vice President
CHICAGO PARTNERS, LLC

EXHIBIT 8

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Expert Report of Steve H. Hanke
Kohen v. PIMCO

April 20, 2007

The CFTC came to a similar conclusion in their investigation of market conditions during the proposed class period:

> In order to create equivalence among the various securities in the deliverable basket that have different maturities and coupon rates, the Exchange [the CBOT] applies a conversion factor to adjust the prices of the deliverable securities to a specified notional coupon rate and term-to-maturity. Currently, the specified notional coupon rate is 6%. The further away the market is from a 6% yield environment, the less well the adjustment factors equilibrate all securities within the basket; thus, some issues are cheaper to deliver than others.[26]

Why didn't the CBOT choose to change the notional coupon rate of its conversion factor? They probably left this remedy aside because they were not able to forecast the drastic decline in intermediate- and long-term interest rates brought on by the strong bull market in Treasuries at the beginning of 2005 prior to the opening of interest in the June 2005 contract.[27] Thomas Rubio observes, "when the Board of Trade changed from a [8] percent coupon to a [6] percent coupon, they changed it well in advance into a contract that had little or no open interest."[28] The flattening of the yield curve that ensued in early 2005 caught everyone by surprise, including the oracular Alan Greenspan, who could only call it a 'conundrum' that the yield curve could flatten so severely in the absence of other signs of recession. Nor could anyone have known then that the 10-year Treasury yield would remain around 4-5% to the present day.

Professor Merrick states, "in reality, the prices of the entire menu of deliverable cash Treasury prices, the future contract and financing rates are jointly determined. Thus, any analysis of normal or abnormal pricing of futures contracts must jointly analyze the determination of cash prices and repo

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one issue that's economically deliverable." (Deposition, 232:12-18) Everybody who got involved in the contract would have known this. (See id. at 233) "So in fact it's built into the fluctuations of interest rates. We know interest rates go up or down. It's built into the contract that you might possibly have...a bad situation where effectively the economically deliverable list of securities is one, and that's the situation we have in June [2005]." (238:13-19)

[26] CFTC, "Amendments to Chicago Board of Trade rule 425.01," p. 9.

[27] Professor Merrick is also an advocate of this remedy. "So what they could do is change the coupon for every new contract and keep it close to the market." (Deposition, 239:4-6)

[28] Rubio deposition, 55:20-24.

rates, especially for the CTD [cheapest-to-deliver] note."[29] We have done just that. To summarize, the May-June 2005 period (as well as the period extending back to late 2004 and forward to September 2005) was characterized by a market environment in which sharply increasing open interest in the 10-Year Treasury Note futures met with a dwindling supply of economically deliverable 10-Year Treasury Notes. The accommodating stance of monetary policy diminished the ability of the repo market to call forth additional supply. With the repo market unable to clear at a non-negative repo rate, an inversion of the futures price over cash (a negative net basis) displaced the effects of shortages in the cheapest-to-deliver note to the Treasury futures market which, like the repo market, was essentially behaving like a forward on the cheapest-to-deliver. The CBOT's conversion factors, which would usually dissipate such distress over several issues in the deliverable basket, instead further concentrated the dynamics of the February 2012 Treasury Note into the pricing of the June 2005 10-Year Treasury Note future. This combination of systemic and institutional phenomena, in addition to market participants' natural economic responses to the usual menu of macroeconomic announcements, caused Treasury market price relations to depart significantly from historical patterns without any need for a manipulative trader.

B. Plaintiffs' test for causation proves that PIMCO did not cause artificial prices

1. Plaintiffs' class certification expert offered Granger causality analysis as an economic test for causation

Despite numerous scattered acknowledgements of the unusual systemic factors affecting the Treasury market in May-June 2005, plaintiffs do not attribute causation to them. Professors Merrick and Pirrong instead rely on long, tedious, and poorly-reasoned narratives which juxtapose movements in

[29] Merrick report, p. 48, paragraph 131.

market prices with trades and utterances by PIMCO employees in the most haphazard way, surmising that every movement in the market must be connected to PIMCO, no matter how small. Their passage from the realm of economics to sensationalistic muckraking could have been avoided had they only heeded the advice of plaintiffs' class certification expert, Professor Gilbert:

> I may need to establish whether and to what extent any artificiality in the price of the June [2005 future] or mispricing of the [February] 2012 (or any other) note is the result of defendants' alleged manipulative activities. It was for this purpose ... that I will need full information on defendants' daily Treasury note and Treasury note futures positions and trading history throughout the class period, as well as prior to and subsequent to the period. *Demonstration of effect is logically prior to quantification of that effect.* Economists routinely use Granger causality analysis for demonstrating probable causal effect. This is a regression-based technique named after its inventor, Nobel prize winner Clive Granger. ... If causality is established (in the sense implied by Granger causality), one can use standard regression techniques to quantify the extent that price artificiality result[ed] from defendants' alleged manipulative actions. This methodology is standard, routinely used by professional economists and taught in all good graduate econometrics courses. Given the positions data requested in my earlier affirmation, I will definitely be able to establish in an uncontroversial fact-based manner whether or not defendants' alleged manipulative behavior was the cause of any mispricing of the 2012 note or artificiality in the June future.[30]

I agree with Professor Gilbert that Granger causality is the starting point from which most economists would begin a discussion of causation. I further agree with him that the demonstration of a (probable) causal effect is prior to the quantification of the effect. Finally, I would add that Granger causality, if anything, tends to find significant relations between time series more often than it should. But if a Granger causality analysis showed the *absence* of a relationship between the price of the June 2005 future and PIMCO's allegedly manipulative trading patterns, this would be a devastating result for the case brought by plaintiffs, because there can be no claim of causation that does not first demonstrate correlation.

[30] Affirmation of Professor Christopher L. Gilbert, August 30, 2006, p. 8 (paragraph 16), emphasis added.

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2. Granger causality analysis does not show that PIMCO caused Treasury futures prices

A Granger causality test that asks whether PIMCO's trading behavior caused changes in the prices of the June 2005 Treasury note future takes the form of a regression of the changes in some measure of PIMCO's holdings of Treasury securities on the change in the Treasury note future price. I use three different measures of PIMCO's holdings of Treasury futures and notes.[31] First, I consider their holdings of Treasury note futures alone. Secondly, I consider the aggregate notional value of their holdings of Treasury note futures, cash holdings of the underlying February 2012 note, and net borrowing of the February 2012 note from the repo market (positive if net borrowing, negative if net lending). Thirdly, I split their holdings into two separate components: holdings of Treasury note futures and net cash position (cash holdings of the February 2012 note plus net borrowing of the February 2012 note from the repo market. This third measure explicitly considers the futures market and the float of the February 2012 note as two distinct components.

It may be asked why it is worth considering futures trading alone when the other two measures consider PIMCO's total exposure to the February 2012 note. I have done so based on the economic principle that an effect produced in a market is usually most efficiently produced through direct transaction in the market, rather than indirect transactions. Thus, if direct transactions show no effect, then it will be unlikely that they will have an effect when combined with indirect transactions.

Before proceeding, it is also worth remarking that, while it is an elementary axiom of statistics that finding a correlation between changes in PIMCO's holdings and changes in price would not imply

[31] The data have been standardized to reflect PIMCO's inventories at any point in time. Holdings of futures and cash securities are given 'as of' each date, whereas repo transactions are considered active between the established settlement dates. With the data standardized in this way, a one-day lag in PIMCO's trading approximates measuring their trading as of the time orders were placed. Data are taken from Treasury Query 1 and 2. I have given a summary in **Exhibit J**.

EXHIBIT 9

IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

JOSEF A. KOHEN, BREAKWATER TRADING LLC, and RICHARD HERSHEY, Plaintiffs, v. PACIFIC INVESTMENT MANAGEMENT COMPANY LLC, and PIMCO FUNDS, Defendants.	No. 05 C 4681 Judge Ronald A. Guzman Magistrate Michael T. Mason

REBUTTAL EXPERT REPORT OF DR. CRAIG PIRRONG

I. INTRODUCTION

1. This rebuttal report is submitted in accordance with FRCP 26(a)(2)(C).

2. In rebuttal to defendant's expert Dr. Steve Hanke's opinions designed to show that defendants did not cause artificial inflation in the June contract prices, I offer the following opinions and reasoning.

3. The report submitted by Dr. Hanke is rife with conceptual, logical, economic, and data errors. As a result, the opinions he offers are unreliable.

4. Some of Dr. Hanke's errors relate to very fundamental concepts. For example, he is very confused—and wrong—on simple concepts such as the net basis, and swap spreads. These concepts should be of second nature to anyone familiar with the operation of the Treasury markets. He also makes numerous data errors, such as omitting the bulk of CBOT Treasury Note futures trading from his volume calculations,

Exhibit R8

Corrected from Robinson

Date	Face Value	Repo Lending	Net of Repo
4/1/2005	1,213,487,000	562,834,000	650,653,000
4/4/2005	1,400,267,000	563,534,000	836,733,000
4/5/2005	1,185,867,000	569,434,000	616,433,000
4/6/2005	1,192,237,000	586,834,000	605,403,000
4/7/2005	1,181,137,000	586,834,000	594,303,000
4/8/2005	1,186,037,000	565,434,000	620,603,000
4/11/2005	1,248,637,000	564,934,000	683,703,000
4/12/2005	1,247,737,000	539,734,000	708,003,000
4/13/2005	1,385,437,000	540,734,000	844,703,000
4/14/2005	1,332,537,000	540,734,000	791,803,000
4/15/2005	1,268,237,000	-81,100,000	1,349,337,000
4/18/2005	1,370,637,000	-79,400,000	1,450,037,000
4/19/2005	1,421,837,000	-77,600,000	1,499,437,000
4/20/2005	1,446,587,000	-58,100,000	1,504,687,000
4/21/2005	1,439,187,000	-88,900,000	1,528,087,000
4/22/2005	1,415,087,000	-106,250,000	1,521,337,000
4/25/2005	1,451,587,000	-104,850,000	1,556,437,000
4/26/2005	1,582,087,000	-107,150,000	1,689,237,000
4/27/2005	1,814,414,000	-107,150,000	1,921,564,000
4/28/2005	1,815,914,000	-107,150,000	1,923,064,000
4/29/2005	1,869,414,000	-87,250,000	1,956,664,000
4/30/2005	1,869,414,000	-87,250,000	1,956,664,000
5/2/2005	1,874,914,000	-87,250,000	1,962,164,000
5/3/2005	1,906,014,000	-76,750,000	1,982,764,000
5/4/2005	1,791,814,000	-76,750,000	1,868,564,000
5/5/2005	1,675,814,000	-78,050,000	1,753,864,000
5/6/2005	1,671,214,000	-76,350,000	1,747,564,000
5/9/2005	2,567,714,000	-76,350,000	2,644,064,000
5/10/2005	2,843,614,000	-78,150,000	2,921,764,000
5/11/2005	2,805,614,000	-78,150,000	2,883,764,000
5/12/2005	2,806,914,000	-55,350,000	2,862,264,000
5/13/2005	2,968,914,000	2,008,434,000	960,480,000
5/16/2005	2,962,214,000	2,297,622,000	664,592,000
5/17/2005	2,972,464,000	2,582,022,000	390,442,000
5/18/2005	2,971,664,000	2,559,222,000	412,442,000
5/19/2005	2,967,464,000	2,530,122,000	437,342,000
5/20/2005	3,404,064,000	2,521,634,000	882,430,000
5/23/2005	4,703,964,000	2,930,134,000	1,773,830,000
5/24/2005	6,062,272,000	3,987,972,000	2,074,300,000
5/25/2005	6,182,872,000	5,791,572,000	391,300,000
5/26/2005	6,072,072,000	5,821,272,000	250,800,000
5/27/2005	6,135,772,000	5,988,172,000	147,600,000
5/30/2005	6,135,772,000	5,988,172,000	147,600,000
5/31/2005	6,368,872,000	6,058,472,000	310,400,000
6/1/2005	6,359,672,000	6,122,672,000	237,000,000
6/2/2005	6,306,572,000	6,092,672,000	213,900,000
6/3/2005	6,303,822,000	6,316,172,000	-12,350,000

6/6/2005	6,303,822,000	6,342,722,000	-38,900,000
6/7/2005	6,289,922,000	6,342,722,000	-52,800,000
6/8/2005	6,379,272,000	6,324,922,000	54,350,000
6/9/2005	5,789,472,000	6,273,422,000	-483,950,000
6/10/2005	5,754,172,000	5,769,372,000	-15,200,000
6/13/2005	5,369,272,000	5,771,572,000	-402,300,000
6/14/2005	5,071,372,000	5,538,172,000	-466,800,000
6/15/2005	5,071,372,000	5,238,172,000	-166,800,000
6/16/2005	4,954,872,000	5,238,472,000	-283,600,000
6/17/2005	4,954,872,000	4,937,672,000	17,200,000
6/20/2005	4,950,372,000	4,934,372,000	16,000,000
6/21/2005	4,885,872,000	4,934,372,000	-48,500,000
6/22/2005	4,885,872,000	4,865,172,000	20,700,000
6/23/2005	4,885,872,000	4,867,472,000	18,400,000
6/24/2005	4,885,872,000	4,868,172,000	17,700,000
6/27/2005	4,885,872,000	4,868,172,000	17,700,000
6/28/2005	4,770,872,000	4,868,172,000	-97,300,000
6/29/2005	20,041,072,000	4,863,272,000	15,177,800,000